

Appl. No. 09/651,924
Amdt. dated May 31, 2005
Reply to Office action of March 2, 2005

REMARKS/ARGUMENTS

Applicants have received the Office Action dated March 2, 2005, in which the Examiner (1) rejected claims 21-23 under 35 U.S.C. § 102(e) as being anticipated by Ben-Michael (U.S. Pat. No. 6,078,565); (2) rejected claim 1 under 35 U.S.C. § 103(a) as obvious over Shimizu (U.S. Pat. No. 6,715,008) in view of Deneroff (U.S. Pat. No. 6,751,698); and (3) rejected claims 2-20 and 24 as obvious over Shimizu in view of Deneroff and further in view of Ben-Michael. With this Response, Applicants amend claims 1-3, 7-8, and 21. Based on the amendments and arguments contained herein, Applicants believe all claims to be in condition for allowance.

As amended claim 1 requires the use of a credit-based allocation scheme "in which the memory controller automatically returns a credit if a number of filled spaces in the shared buffer is below a threshold, but waits to return a credit when the number of filled spaces exceeds said threshold." None of the art of record teaches this feature. Shimizu, for example, discloses credit adjustment logic 318 which causes a "credit to be increased if a packet is read from buffer 301." Col. 5, lines 11-12. That is, a credit is released for subsequent use only when a buffer entry becomes free for use. Ben-Michael discloses that "[t]he receiver, after moving the arriving cell out of its buffer should return a credit to the sender." Col. 4, lines 25-26. This passage of Ben-Michael teaches in effect holding on to a credit and not releasing it until an otherwise occupied buffer entry is freed up for use by another "cell" (i.e., a message). Thus, neither Shimizu nor Ben-Michael teaches or suggests a memory controller that "automatically returns a credit if a number of filled spaces in the shared buffer is below a threshold, but waits to return a credit when the number of filled spaces exceeds said threshold." Deneroff also is deficient in this regard. For at least this reason, claim 1 and all claims dependent thereon are allowable over the art of record.

Applicants also amend claims 2 and 3. These amendments were made merely to maintain consistency with the amended language of claim 1.

Applicants amend claim 7 to require that, in addition to the limitation that if the request buffer is filled below a buffer threshold, the directory in-flight table

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immediately returns credits, "if the request buffer is filled above the buffer threshold, the directory in-flight table holds on to a credit and returns said credit upon an entry in the request buffer becoming free." As explained above, none of the art of record teaches or suggests this type of credit scheme. For at least this reason, claim 7 and all claims dependent thereon are allowable over the art of record.

Applicants amend claim 8 in accordance with the amendment to claim 7.

Applicants traverse the rejection of claim 14. Claim 14 requires "automatically paying the credit back to the source" if "the number of empty buffer spaces is larger than a buffer threshold" and also "holding the credit until a buffer space becomes empty and then paying a credit back" if "the number of empty buffer spaces is smaller than the buffer threshold." As explained above, none of the art of record teaches or suggests this combination of limitations. For at least this reason, claim 14 and all claims dependent thereon are allowable over the art of record.

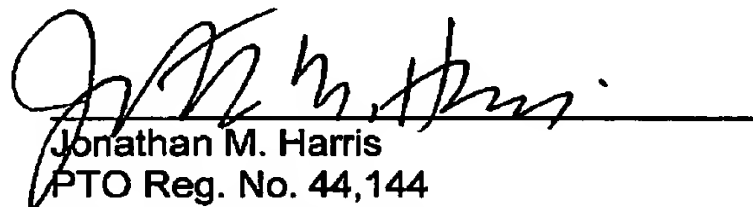
Applicants amend claim 21 to require a "buffer accessible to said receiver." As amended, claim 21 also requires that the "receiver automatically issues a credit to a source if a number of filled spaces in said buffer is less than a threshold and holds on to a credit if the number of filled spaces is greater than the threshold." None of the art of record teaches or suggests this combination of features. For at least this reason, claim 21 and all claims dependent thereon are allowable over the art of record.

In the course of the foregoing discussions, Applicants may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. Moreover, it should be understood that there may be other distinctions between the claims and the cited art which have yet to be raised, but which may be raised in the future.

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Applicants respectfully request reconsideration and that a timely Notice of Allowance be issued in this case. It is believed that no extensions of time or fees are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Hewlett-Packard Development Company's Deposit Account No. 08-2025.

Respectfully submitted,



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